



Generative Phonology

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Generative phonology. By SANFORD A. SCHANE. Englewood Cliffs, N.J.: Prentice-Hall, 1973. Pp. xvi, 127.

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Anyone who has studied or taught beginning phonology using Chomsky & Halle 1968 (henceforth *SPE*) as a textbook will recognize the virtues of this little volume. In the space of 127 pages, Schane brings the reader up to date on the state of phonological theory as of 1968, sparing him a struggle through the more ponderous *SPE* (although a mastery of the latter will ultimately be necessary). This book is one of several short texts in the 'Foundations of modern linguistics series', edited by Schane. Disciplines such as biology have long had such series of texts; and this seems to me to be an excellent way to organize the subject matter of a science—giving the students a comprehensive yet compact text, while allowing the instructor to choose those aspects which he wants to emphasize. I have not yet had the opportunity to examine all the other titles (indeed some have not yet appeared), and it seems out of place to comment on the series in a review devoted to a single title. I'll confine myself to the comment that the other volumes I have seen seem quite uneven: Gross' *Mathematical models in linguistics* (1972) is entirely too advanced for use in any beginning course, while Elgin's *What is linguistics?* (1973), while covering a broad range of topics that one would want to discuss in a beginning course, treats each one so superficially as to be of little use, even in a

beginning course. The title under review has happily struck a middle ground between these two extremes.

It may seem somewhat strange that this first textbook of generative phonology—an area of linguistics which has been practiced for nearly twenty years—should not appear until 1973, and that it should reflect the state of the art as of five years earlier. But this is not a valid line of criticism in a field where any formal publication is assumed to be already out of date. To be comprehensible and to fulfil its function, a textbook needs to present a coherent theory: e.g., Burt 1971 presents the state of syntax as of Chomsky 1965. It would be unreasonable to expect a textbook of phonology to reflect all the recent advances and controversies in the field.

The book is divided, rather arbitrarily,¹ into two sections: 'Segmental phonology' and 'Dynamic phonology'. The four chapters comprising the first section are: 1, 'The segment', 2, 'Phonological patterns', 3, 'Distinctive features', and 4, 'Redundancy'. The second section has seven chapters: 5, 'Phonological processes', 6, 'Phonological rules', 7, 'Underlying representations', 8, 'Ordered rules', 9, 'Derived representations', 10, 'Non-phonological effects', and 11, 'Natural phonology'. The book concludes with a 'Final note', bibliography, and index.

Chap. 1 introduces the segment as an abstraction from the acoustic/articulatory continuum, and suggests the need for abstraction beyond the autonomous phonemic level in phonological (systematic phonemic) representations, because of alternations like *electric/electricity*.² Chap. 2 presents a preliminary attempt at a taxonomy of language sounds—amplified in Chap. 3 in terms of distinctive features. Although the general presentation is good, S makes several regrettable phonetic errors. In a description of the vowel [i], he says: 'the body of the tongue bunches up HIGH in the FRONT part of the mouth close to the hard palate' (10). While [i] is considered a front vowel, and no other vowel can be articulated further front, the articulatory position is the same as that of the palatal stop (IPA [c]), which is [−anterior]. S's description suggests that [i] is in the [+anterior] region, which is not true of any vowel.

Frequently S speaks of sounds as being 'rare', e.g. retroflex consonants, pharyngeal consonants (16), and clicks (32), which he calls 'exoticisms'. Although S claims to be treating 'the properties of phonological systems in general—what is common to the phonologies of all languages' (xv), he seems to regard phenomena in languages other than English or French as oddities not to be taken seriously. Any student who takes his stated aims at face value will find these prejudices disturbing, or even contradictory.³

¹ Had the first section been entitled 'Static phonology', the division might have appeared less arbitrary, and the intended contrast would have emerged more clearly. Chap. 4, in the first section, belies the section heading in that it deals with redundancy, both of segments and of sequences; and Chap. 11, in the second section, treats both static and dynamic phonology in a markedness framework.

² A more felicitous example might have been the English Vowel Shift, since the 'palatalization' of *k* occurs only before certain morphologically marked suffixes; cf. *monarch/monarchy*.

³ In a discussion entitled 'Are there only front and back vowels?', S notes that the phonetic literature generally cites a category CENTRAL between FRONT and BACK, with [a] frequently being assigned to this category. He bases the classification having only front/back (actually [±back]) on the fact that 'central and back unrounded [vowels] do not GENERALLY contrast (although Swedish is reported to have such a contrast)' (12). It would be nice to know who reported this contrast, since I have never seen a phonetic description of Swedish describing

Another of S's phonetic inaccuracies is his statement that 'GLOTTALIZED consonants have a secondary closure at the glottis, in addition to the primary constriction higher up' (22). Phonetically, glottalized consonants are produced by a distinct initiation mechanism—glottalic egressive—which differentiates them from non-glottalized sounds. For this reason, Catford 1968 prefers the British term 'ejective' to describe glottalized consonants, since the American term 'glottalized' suggests a secondary articulation (similar to 'palatalized'). In fact, Ladefoged 1971 has proposed features based on initiation mechanisms, although it is not clear that such features are required for systematic phonemic representations. Until this becomes clear, we can continue to use the cover term [\pm glottalized], but at least we should keep the phonetics straight.

In his discussion of glottal stop, S mentions that it occurs in some types of New York City English (where it replaces the [t] in words like *bottle*), and more generally in the exclamation *uh-uh* [$ʔ\lambda^{\text{h}}\lambda$] meaning 'no'; he implies that glottal stop is of limited distribution in English, being restricted to these instances. But virtually all American speakers have glottal stop before syllabic [n], as in *button* [b $\lambda^{\text{h}}\eta$].

Chap. 3 is a straightforward treatment of distinctive-feature theory, giving the *SPE* system with the consistent replacement of [vocalic] by [syllabic]. S's discussion of what constitutes a natural class is somewhat inconclusive. In discussing the features [anterior] and [coronal], he notes that these do not make *t* [+ant, +cor] and *k* [-ant, -cor] appear to be a natural class, although they should perhaps be so considered: 'it is not uncommon for both to be palatalized before front vowels—note *regent*, *regency*; *electric*, *electricity*' (30). But to call these processes 'palatalization' is phonetically misleading, since palatalization involves adding an additional articulation in the palatal region. Phonologically, *t*→*s* is a common process before front vowels, and may be called palatalization, even though the rule in features would be

$$\begin{bmatrix} +\text{cor} \\ +\text{obst} \\ -\text{voice} \end{bmatrix} \rightarrow [+cont] / \text{---} \begin{bmatrix} \text{V} \\ -\text{back} \end{bmatrix}$$

([+strident] is supplied by linking rules)

as opposed to true palatalization, which involves adding the secondary features [+high, -back] to the values of [anterior] and [coronal] which define the primary point of articulation. In contrast, *k*→*s* is a less natural process; furthermore, it is restricted in English to particular morphological environments, such as the suffix *-ity*. The marking conventions of *SPE*, interpreted as linking rules, predict *č* rather than *s* as the palatalized version of *k*. (S's brief discussion of marking conventions in Chap. 11 does not mention linking rules at all, perhaps to avoid some confusion for beginning students.) S does not make a case for the relatedness of these two 'palatalizations', and I would recommend avoiding pseudo-problems of this kind until the student has a clearer notion of what constitutes a natural class in the first place.

any back unrounded vowels. S is probably referring to the famous four high vowels of Swedish [i], [y], [ɯ], and [u], where [ɯ] is phonetically high, central, unrounded, but with strong lip spreading. Morris Halle has recently (class lectures, Summer 1974) proposed the features [labial] and [spread] to account for this contrast:

<i>i</i>	<i>y</i>	<i>ɯ</i>	<i>u</i>	
+	-	+	-	spread
-	+	+	+	labial

Chap. 4 treats redundancy, both in segments and in sequences. In discussing redundancy in sequences, S begins with the notion ‘conceivable morpheme’; but he ends with the notion ‘conceivable word’, never defining the difference between the two concepts. In fact, they need to be carefully distinguished. Thus /bund/ is a morpheme of German, but it is not a possible word, since a phonological rule of German devoices word-final obstruents. Again in this chapter S displays the prejudice that languages other than English and French are ‘exotic’. Consider the statement on p. 45: ‘Many languages have initial clusters of a stop followed by a liquid, but an initial sequence of liquid plus stop would be RARE IF NOT IMPOSSIBLE’ [emphasis supplied]. But Russian has many words beginning with such ‘rare’ sequences: *rta* ‘mouth’ (gen. sg.), *l’va* ‘lion’ (gen. sg.), where the liquid is definitely not syllabic—as well as many more ‘difficult’ clusters, as in *vstrečát’* ‘to meet’, *Mstislav* (proper name), *mzda* ‘recompense’, *mgla* ‘gloom’, *mgnovénie* ‘instant’ etc. It is possible to get across the point that these clusters are marked or less common, and still not burden beginning phonology students with prejudices which might keep them from analysing truly ‘exotic’ languages with open ears and minds.

Under the rubric ‘Dynamic phonology’, Part 2 presents the notions of phonological alternations and phonological rules. The only difficulty I find in the opening chapter of this section, Chap. 5, is a lack of explicitness in two examples from Russian. The first example, p. 50, is meant to illustrate palatalization of consonants before front vowels.⁴ But several of the alternations also involve reduction of the stem vowel, which accompanies the shift of stress from the root to the front vowel suffixes (locative singular, infinitive, diminutive). S’s failure here to mention vowel reduction or to represent it phonetically leads to confusion when the same phenomenon is presented on p. 60 as a paradigmatic illustration of vowel reduction. This reduction, which accompanies the accent shift onto the plural ending, is clearly marked phonetically. But the student is bound to wonder, when he sees these examples, whether the examples back on p. 50 have the same alternation—and if so, how they could be represented phonetically.

In Chap. 6, S discusses the major types of phonological rules and the notational conventions that represent them. One type of phonological rule not discussed is that which I have called PROPAGATING rules (see Jensen 1974a and Jensen & Stong 1973 for discussion). Such rules are quite common, and merit some discussion even in an introductory text. By failing to mention this type of rule, S avoids the issue of whether propagating rules should be SIMULTANEOUS, as proposed in *SPE*, or ITERATIVE, as proposed in my papers cited above. One example S uses is Turkish vowel harmony, which is a propagating rule. Having given some data from Turkish (52) where only one suffix is involved, S states a rule intended to account for these data:

$$\left[\begin{array}{c} \text{V} \\ +\text{high} \end{array} \right] \rightarrow \left[\begin{array}{c} \alpha_{\text{back}} \\ \beta_{\text{round}} \end{array} \right] / \left[\begin{array}{c} \text{V} \\ \alpha_{\text{back}} \\ \beta_{\text{round}} \end{array} \right] C_0 + C_0 \text{ —}$$

⁴ Real palatalization this time, not the English pseudo-palatalization discussed in Chap. 3.

Since S has artificially limited his data to high vowel suffixes, this rule works. However, he wrongly implies that this represents a complete analysis. To account for the assimilation of arbitrarily many suffixes, I would propose a left-to-right iterative rule:

$$\left[\begin{array}{c} V \\ \langle +\text{high} \rangle \end{array} \right] \rightarrow \left[\begin{array}{c} \alpha_{\text{back}} \\ \langle \beta_{\text{round}} \rangle \end{array} \right] / \left[\begin{array}{c} V \\ \alpha_{\text{back}} \\ \beta_{\text{round}} \end{array} \right] C_0 \text{ ---}$$

Chap. 7 concerns underlying representations, abstractness, and similarities between synchronic and diachronic processes. It would certainly have been ill-advised to include a detailed discussion of the abstractness controversy (cf. Jensen 1974b) in a book of this kind, and S has wisely avoided doing so. However, the question of similarities between synchronic and diachronic processes is more serious, and deserves more extensive treatment than S has given it. It is at least misleading to state, as he does, that 'The alternations occurring in a language are due to sound changes which took place in the history of that language ... the alternations found in any contemporary language are the vestiges of historical change' (83). No one would question that historical changes CAN BE the source of synchronic alternations, and in fact there are many examples of this. But S suggests that this is the ONLY source of synchronic alternation, which is certainly false. It is true, as he states, that 'underlying representations often coincide with earlier attested [surface] forms and that the synchronic phonological rules may (but not necessarily always) recapitulate the actual sound changes'. But linguistic change is much more complex than S has implied. Since this chapter has hinted at diachronic study, the student deserves some indication of a more balanced view such as appears in some recent studies. For example, one might note the suggestions in Kiparsky 1968 that linguistic change results from rule loss, rule addition, and rule simplification. S does mention one such mechanism—rule re-ordering—in the next chapter; but perhaps the most important notions in this area are restructuring and the role of language acquisition, which he does not mention. And perhaps the most important notion of all is the question of the MOTIVATION of linguistic change, although very little is known about this (cf. Miller 1973). The problem of phonological change may deserve a chapter of its own in this book.

Chap. 8 introduces rule ordering. Again, S wisely avoids the controversy of whether rules should be extrinsically ordered, as traditionally assumed, or ordered according to a set of universal principles, such as those advanced by Koutsoudas, Sanders & Noll 1974. Instead he discusses rule re-ordering in historical change according to Kiparsky's 1968 notion of ordering, by which feeding orders are maximized and bleeding orders minimized. One should note that Kiparsky 1971, two years before the appearance of S's book, revised this notion to that of minimizing opacity in re-ordering, in order to meet the objections of Kenstowicz & Kisseberth 1971 to the earlier approach, in which some cases of bleeding order appeared to be less marked than the opposite order.

In Chap. 9, 'Derived representations', S gives the traditional discussion of Halle's (1959) argument that no level of representation coinciding with the 'phonemic' level of the structuralists exists; he then remarks (98) that the 'derived

representations [in generative phonology] are amazingly similar to taxonomic phonemic representations': this of course refers to his argument (Schane 1971) for re-introducing the notion of the taxonomic phonemic level into phonology, though not as a 'level' of representation. He concludes the chapter with an argument reminiscent of the naturalness condition of Postal 1968, stating that underlying forms which are pronounceable, even though 'abstract', are preferable to arbitrary underlying symbols with no phonetic interpretation, as proposed by Fudge 1967. Any deviation from phonetic reality in setting up underlying forms requires a phonological rule to convert the abstract form into the phonetic one. If the rule required is independently motivated, then the abstractness is justified.

No detailed comment is necessary here on Chap. 10, 'Non-phonological effects', which gives a straightforward treatment of stress assignment by syntactic categorization, and of diacritic features, exceptions, and the phonological cycle as applied to stress rules. The controversial question of the existence of cyclic application in segmental rules is avoided.

The final chapter has the provocative title 'Natural phonology'. A number of ideas are subsumed under this title today, not all necessarily compatible—e.g., the works of David Stampe and Theo Vennemann. Inter alia, these theories aim at re-introducing functionalism into the formalism of generative phonology. S discusses markedness and natural rules without mentioning *SPE*'s linking conventions, which is to be expected in a chapter of only ten pages. This is an area of considerable discussion and debate in which very little can be set forth as doctrine; thus Schane has again wisely avoided saying too much about a controversial issue.

Only a small number of typographical errors mar the otherwise excellent presentation by Prentice-Hall. I will mention three that might interfere with a novice's understanding: on p. 14, *e* for *ə* in the phonetic transcription [fetâgrâfiy] (line 9); p. 52, line 15, *umlai* for *umlaut*; p. 56, line 14 from bottom, *Seivers' Law* for *Sievers' Law*.

In spite of shortcomings, on which I may appear to have concentrated unduly in this review, this book has many positive aspects which recommend it highly to potential readers and teachers. *Generative phonology* is extremely readable and informative; it will familiarize the reader with the basic ideas of generative phonology without requiring him to consult the copious literature on the subject. Anyone using it will have to consult further references for more information; but the short bibliography will give the interested reader a good start in finding such literature. On the whole, it is a good way for anyone to get acquainted with generative phonology.

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Thomas Whythorne's speech: the phonology of a sixteenth-century native of Somerset in London. By RUPERT E. PALMER, JR. (*Anglistica*, 16.) Copenhagen: Rosenkilde & Bagger, 1969. Pp. 309. Kr. 108.00.

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Thomas Whythorne (1528–96) was a 16th-century composer and music teacher, the author of two published songbooks (1571, 1590) and of an extensive autobiography. This latter remained in manuscript, unknown, until its discovery in 1955 and later publication (Osborn 1961). It has received some notice among students of the Elizabethan period as 'the first sustained "modern" autobiography written by an Englishman' (Osborn 1959:23), and contains a rather frank account of its author's sojourns in the homes of well-to-do country gentlemen and lesser court figures, including some amusing amorous adventures with bored wives and lonely widows. It is of concern to historians of the English language because it is written, more or less consistently, in what the author calls 'a new Orthografye', in which he promises to 'wryte wurdz as they be sownded in speech' (Osborn 1961:6) but without inventing new characters. He refers directly to John Hart's *Orthographie* of 1569 (ed. Danielsson 1955–63), but he does not follow Hart's practice or evince phonetic sophistication anything like Hart's. He nowhere gives a reason for the adoption of his orthography, but his motivation seems to be similar to that of the myriads of amateur spelling reformers who have flourished in England and America for the last four centuries and whose ranks include such famous names as Theodore Roosevelt and Bernard Shaw. As a reformer, he belongs to the respelling (Dewey) school rather than the new alphabet (Pitman) school—unlike Hart, who felt the necessity of devising new characters to augment the tradi-